

$$D = 2B - \frac{C}{2A} - 4 \quad (4)$$

$$= 2(3) - \frac{4}{2(2)} - 4$$

$$= 6 - \frac{4}{4} - 4$$

$$= 6 - 1 - 4$$

$$D = 1$$

$$= \frac{2^6 \times 3^7 \times 5^7 \times 3^{10} \times 5^3}{5^{10} \times 2^6 \times 3^{16}}$$

$$= \frac{2^6 \times 3^{17} \times 5^{10}}{2^6 \times 3^{16} \times 5^{10}}$$

$$= 2^0 \times 3^1 \times 5^0$$

$$B = 3$$

$$\begin{aligned}
 C &= 2\sqrt{12} - 7\sqrt{75} + \sqrt{1728} + 7\sqrt{3} + 4 \quad (3) \\
 &= 2\sqrt{4 \times 3} - 7\sqrt{25 \times 3} + 24\sqrt{3} + 7\sqrt{3} + 4 \\
 &= 4\sqrt{3} - 35\sqrt{3} + 24\sqrt{3} + 7\sqrt{3} + 4 \\
 &= 0\sqrt{3} + 4
 \end{aligned}$$

$$C = 4$$

$$\begin{array}{r|l}
 1728 & 2 \\
 864 & 2 \\
 432 & 2 \\
 216 & 2 \\
 108 & 2 \\
 54 & 2 \\
 27 & 3 \\
 9 & 3 \\
 3 & 3 \rightarrow \sqrt{3} \\
 1 &
 \end{array}$$

حل أسئلة الامتحان التحريبي الأول.
 • مادة الجبر (الوحدات الأولى والثانية).
 • (المدرس: لؤي الدمني).

التمرين الأول:

$$A = \frac{512}{224} - \frac{2}{7} \quad (1)$$

r	b	a
64	224	512
32	64	224
0	32	64

$$\Rightarrow \text{GCD}(512, 224) = 32$$

$$\begin{aligned}
 512 \div 32 &= 16 \\
 224 \div 32 &= 7
 \end{aligned}$$

$$A = \frac{16}{7} - \frac{2}{7} = \frac{14}{7}$$

$$A = 2$$

$$B = \frac{4^3 \times 15^7 \times 9^5 \times 5^3}{25^5 \times 8^2 \times 3^{16}} \quad (2)$$

$$\begin{aligned}
 &= \frac{(2^2)^3 \times (3 \times 5)^7 \times (3^2)^5 \times 5^3}{(5^2)^5 \times (2^3)^2 \times 3^{16}}
 \end{aligned}$$

(4) جداء الضلعين القائمين

$$S = \frac{AB \times BC}{2}$$

$$= \frac{AB \times BC}{2}$$

$$= \frac{3\sqrt{2} \times 4\sqrt{2}}{2}$$

$$S = 12$$

مجموع الأضلاع

$$p = \frac{3\sqrt{2} + 4\sqrt{2} + 5\sqrt{2}}{2}$$

$$= \frac{12\sqrt{2}}{2} = 6\sqrt{2}$$

$$p = \sqrt{288}$$

التمرين الثالث:

ABC مثلث فيه

$$AC = \sqrt{75} - \sqrt{3}$$

$$= \sqrt{25 \times 3} - \sqrt{3}$$

$$= 5\sqrt{3} - \sqrt{3}$$

$$AC = 4\sqrt{3} \text{ cm}$$

$$BC = \sqrt{48}$$

$$= \sqrt{16 \times 3}$$

$$BC = 4\sqrt{3} \text{ cm}$$

التمرين الثاني:

(1)

$$BC = \frac{\sqrt{128}}{2}$$

$$= \frac{\sqrt{64 \times 2}}{2} = \frac{8\sqrt{2}}{2}$$

$$BC = 4\sqrt{2}$$

$$AB = \sqrt{50} - \sqrt{8}$$

$$= \sqrt{25 \times 2} - \sqrt{4 \times 2}$$

$$= 5\sqrt{2} - 2\sqrt{2}$$

$$AB = 3\sqrt{2}$$

(2) برهان ABC مثلث قائم في B

نطبق مبرهنة فيثاغورث

$$(AC)^2 = (AB)^2 + (BC)^2$$

$$= (3\sqrt{2})^2 + (4\sqrt{2})^2$$

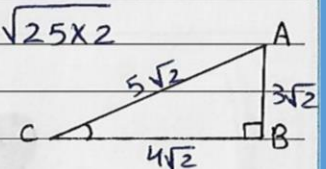
$$= 9(2) + 16(2)$$

$$= 18 + 32$$

$$(AC)^2 = 50$$

$$AC = \sqrt{50} = \sqrt{25 \times 2}$$

$$AC = 5\sqrt{2}$$



$$\cos \hat{C} = \frac{BC}{AC}$$

(3)

$$\cos \hat{C} = \frac{4\sqrt{2}}{5\sqrt{2}} = \frac{4}{5}$$

$B = (6x - 2\sqrt{3})(6x + 2\sqrt{3}) + 2x(x+1)$ $= (6x)^2 - (2\sqrt{3})^2 + 2x^2 + 2x$ $= 36x^2 - 4(3) + 2x^2 + 2x$ $= 36x^2 - 12 + 2x^2 + 2x$ $B = 38x^2 + 2x - 12$	$x = 1 + \sqrt{2} \quad (3)$ $B = 10x^2 + 29x - 72$ $= 10(1 + \sqrt{2})^2 + 29(1 + \sqrt{2}) - 72$ $= 10[(1)^2 + 2(1)(\sqrt{2}) + (\sqrt{2})^2] + 29 + 29\sqrt{2} - 72$ $= 10(1 + 2\sqrt{2} + 2) + 29\sqrt{2} - 43$ $= 20\sqrt{2} + 30 + 29\sqrt{2} - 43$ $B = 49\sqrt{2} - 13$	★ التمرين الرابع: $Y = (5\sqrt{3} - 4\sqrt{5})(5\sqrt{3} + 4\sqrt{5}) \quad (1)$ $= (5\sqrt{3})^2 - (4\sqrt{5})^2$ $= 25(3) - 16(5)$ $= 75 - 80$ $Y = -5 \quad \text{عدد صحيح}$
$C = (3x+7)(3x+5) - 5x(2x-1)$ $= 9x^2 + 15x + 21x + 35 - 10x^2 + 5x$ $C = -x^2 + 41x + 35$	$B = (5x-3)(2x+9) - 5(2x+9) \quad (4)$ $= (2x+9)[5x-3-5]$ $B = (2x+9)(5x-8)$	$Z = (2\sqrt{5} - 10\sqrt{2}) \quad (2)$ $= (2\sqrt{5})^2 - 2(2\sqrt{5})(10\sqrt{2}) + (10\sqrt{2})^2$ $= 4(5) - 40\sqrt{10} + 100(2)$ $= 20 - 40\sqrt{10} + 200$ $Z = 220 - 40\sqrt{10} \quad \text{عدد غير عادي}$
★ التمرين السادس: النشر $A = (2x+5)^2 - (2x-5)^2$ $= (2x)^2 + 2(2x)(5) + (5)^2 - [(2x)^2 - 2(2x)(5) + (5)^2]$ $= 4x^2 + 20x + 25 - [4x^2 - 20x + 25]$ $= 4x^2 + 20x + 25 - 4x^2 + 20x - 25$ $A = 40x$	$B = (5x-3)(2x+9) - 5(2x+9) \quad (1)$ $= (5(-\frac{9}{2}) - 3)(2(-\frac{9}{2}) + 9) - 5(2(-\frac{9}{2}) + 9)$ $= 0 \quad 0$ $B = 0$	★ التمرين الخامس: $B = (5x-3)(2x+9) - 5(2x+9) \quad (2)$ $= 10x^2 + 45x - 6x - 27 - 10x - 45$ $B = 10x^2 + 29x - 72$

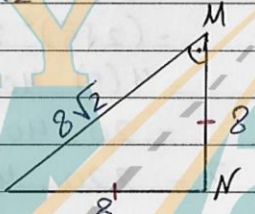
2. بما أن MNK مثلث قائم في N
طبق مبرهنة فيثاغورس

$$\begin{aligned}
 (MK)^2 &= (MN)^2 + (NK)^2 \\
 &= 8^2 + 8^2 \\
 &= 64 + 64
 \end{aligned}$$

$$(MK)^2 = 128$$

$$MK = \sqrt{128} = \sqrt{64 \times 2}$$

$$MK = 8\sqrt{2}$$



$$\sin \hat{M} = \frac{KN}{KM} = \frac{8}{8\sqrt{2}}$$

$$\sin \hat{M} = \frac{1 \times \sqrt{2}}{\sqrt{2} \times \sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$\begin{aligned}
 F &= (x-3)^2 + 14(x-3) + 49 \\
 &= ((x-3) + 7)^2
 \end{aligned}$$

$$F = (x+4)^2$$

$$\begin{aligned}
 G &= (5x-2)(5x+2)^2 - 25(5x-2) \\
 &= (5x-2)[(5x+2)^2 - 25] \\
 &= (5x-2)[(5x+2+5)(5x+2-5)]
 \end{aligned}$$

$$G = (5x-2)(5x+7)(5x-3)$$

$$\begin{aligned}
 H &= 4x^2(x+1) - 9(x+1) \\
 &= (x+1)[4x^2 - 9] \\
 &= (x+1)[(2x-3)(2x+3)]
 \end{aligned}$$

$$H = (x+1)(2x-3)(2x+3)$$

التمرين الثاني :

$$MN = \sqrt{2}^6$$

$$= \sqrt{2}^{\frac{6}{2}}$$

$$MN = 2^3 = 8$$

$$NK = \frac{5^3 \times 2}{125 \times 2^{-2}}$$

$$= \frac{5^3 \times 2}{5^3 \times 2^{-2}}$$

$$NK = 2^3 = 8$$

$$\Rightarrow MN = NK = 8$$

وهو المثلث متساوي الساقين

★ التمرين السابع : حل

$$A = 8x^2 - 12x$$

$$A = 4x(2x-3)$$

$$\begin{aligned}
 B &= (8x+3)(2x-1) + 7(2x-1) \\
 &= (2x-1)[8x+3+7]
 \end{aligned}$$

$$B = (2x-1)(8x+10)$$

$$\begin{aligned}
 C &= (2x-7)(4x+5) - 6x+21 \\
 &= (2x-7)(4x+5) - 3(2x-7)
 \end{aligned}$$

$$= (2x-7)[4x+5-3]$$

$$C = (2x-7)(4x+2)$$

$$D = x^3 + x^2 + x + 1$$

$$= x^2(x+1) + 1(x+1)$$

$$D = (x+1)(x^2+1)$$

ما في امثال بحط واحد

$$E = (2x+5)^2 - (2x-5)^2$$

$$\begin{aligned}
 &= [2x+5+2x-5][2x+5-(2x-5)] \\
 &= (4x)(10)
 \end{aligned}$$

$$E = 40x$$

دورة 2022 ، التمرين التاسع :	دورة 2021 التمرين (الحادي عشر) :	دورة 2020 التمرين (الثاني عشر) :
$E = (x-1)^2 - 4$ (1) انشتر تم اختزل E (2) حال E إلى جبراء عوامل الحل (1) $E = (x)^2 - 2(x)(1) + (1)^2 - 4$ $= x^2 - 2x + 1 - 4$ $E = x^2 - 2x - 3$ (2) $E = (x-1)^2 - 4$ $= [x-1-2][x-1+2]$ $E = (x-3)(x+1)$	$AD = \sqrt{12}$ المستطيل ABCD بعده $AB = \sqrt{27} + 2\sqrt{3}$ (1) اكتب كلاً من بعدي المستطيل بالصيغة $a\sqrt{3}$ (2) اربط بعدي المستطيل ومساوية $AD = \sqrt{12} = \sqrt{4 \times 3}$ (1) $AD = 2\sqrt{3}$ $AB = \sqrt{27} + 2\sqrt{3} = \sqrt{9 \times 3} + 2\sqrt{3}$ $AB = 3\sqrt{3} + 2\sqrt{3}$ $AB = 5\sqrt{3}$ (2) $p = 2(AB + AD)$ $= 2(5\sqrt{3} + 2\sqrt{3})$ $= 2(7\sqrt{3})$ $p = 14\sqrt{3}$	$A = (x-5)^2 - 9$ أولاً : 1- انشتر تم اختزل A 2- حال A إلى جبراء عوامل $A = (x-5)^2 - 9$ (1) $= (x)^2 - 2(x)(5) + (5)^2 - 9$ $= x^2 - 10x + 25 - 9$ $A = x^2 - 10x + 16$ (2) $A = (x-5)^2 - 9$ $= [x-5-3][x-5+3]$ $A = (x-8)(x-2)$ $B = \frac{(2^2)^5 \times 3^2 \times 3 \times 5}{2^6 \times 3^3}$ ثانياً : $= \frac{2^{10} \times 3^3 \times 5}{2^6 \times 3^3} = 2^4 \times 5$
$E = (x-2)(2x+5) - 3(x-2)$ (1) انشتر تم اختزل E (2) حال E إلى جبراء عوامل $E = (x-2)(2x+5) - 3(x-2)$ (1) $= 2x^2 + 5x - 4x - 10 - 3x + 6$ $E = 2x^2 - 2x - 4$ (2) $E = (x-2)[2x+5-3]$ $E = (x-2)(2x+2)$	$S = AB \times AD$ $= 5\sqrt{3} \times 2\sqrt{3}$ $S = 10 \times 3$ $S = 30$	$B = 80$ انشتر تم اختزل